TRANSCRIPT of GOVERNOR LINDA LINGLE'S TESTIMONY

Before the
HOUSE COMMITTEE ON EDUCATION
January 31, 2007
HB 1268 – Relating to Innovation in Education

Good afternoon, Chair Takumi, Vice Chair Byrg, Members Finnegan, Ching, Chang and Bertram.

I appreciate very much you taking up House Bill 1268, our innovation in education bill. And Chair Takumi, I especially appreciate the time you've spent with my staff – not only this year, but in past years as well.

I think on the substantive issues involving education, you are the most knowledgeable here at the Legislature. We enjoy sharing these ideas with you, and we appreciate your own focus on innovation in education through e-schooling and other approaches.

I think that nearly everyone agrees that for economic growth, diversification and sustainability will only come about by applying high-skilled human resources to the creation and adoption of innovation across our entire economy. Our goal is a simple and important one: to raise the standard of living for all people in Hawai‘i, while reducing our reliance on our natural resources including land and to do so in a way that preserves our lifestyle.

A key part of being able to achieve our goal is the education of our young people. This bill today has five key components to it. And I want to mention that it is a triple-referred bill, so we would request that you do take action on it so we can get it to the committees where we need to be in a timely fashion. We think it's one of the most important bills you will consider this legislative session.

The five components include a system of STEM academies and pre-academies. And "STEM" is a word you'll hear a lot about – it's an acronym for "science, technology, engineering and math." So it's a system of STEM academies and pre-academies.

Secondly, we want to increase the number of students seeking STEM degrees and certificates by awarding STEM scholarships. Third, expanding the work experience of students through internships. Four, increase the quality of STEM skill teaching. And fifth, increase the quality of STEM education in colleges.

The academy we propose is known as the HiEST – "Hawai‘i Excellence through Science and Technology". This program would be located within the UH Community College system, and we've requested just under $5 million for this program. I know that the community college will testify later, the DOE will testify later; and we want to be clear that all of the proposals for funding here are separate and distinct from their own budgets that have been submitted, and they are all figured into our six-year financial plan.

The HiEST Academy would be a voluntary program, begun in 14 of our high schools, designed to increase the readiness and motivation of high school graduates to pursue post-secondary education and training, and to present career options in STEM disciplines. These academies would be modeled on the successful construction academies already operating in our schools, as well as the Cisco academies.

The priority we view for these academies is to engage those students not already involved in AP or Advanced Placement programs, not involved in International Baccalaureate or advanced science and math programs. These are average students who haven't already discovered the excitement of science, math and technology – a way to draw them in and to give them the confidence in these subjects.

The teachers in the first academies will be certified to teach both DOE and community college standards, and the students will earn both high school and college credit.

The goal for the first two years is to serve 4,000 students by the end of the second year, with 1,000 students graduating annually from the HiEST Academies. The goal is to have at least 25% of the student body of each of the 14 schools enrolled by the end of the second year.

An important metric for us to measure the success of the HiEST Academy is to reduce to no more than 20% the number of students attending college who need remediation in English and math. The current figures are substantially higher than that.

The pre-academy program would be known as FIRST, and that acronym stands for "Fostering Inspiration and Relevance through Science and Technology." This pre-academy program would be located at the University of Hawai'i. It requested just over $2.6 million for this program to be split between $734,000 to be with the robotics and space program, and $438,000 to an existing program to expand it – it's called RET, "Research Experience for Teachers," and it's located at the UH College of Engineering.

The mission for the FIRST Academy is to stimulate interest and achievement of middle school students in STEM skills, and to prepare them to enter the HiEST Academies in the 9th grade.

The second part of the mission is to complement and support the HiEST Academy program by housing and providing direction for existing statewide robotics and space contextual learning programs.

And third is to cooperate and coordinate with the UH College of Engineering for the Research Experience for Teachers program. This program supports the development of the middle school teachers' skills, knowledge and development of curriculum materials in STEM subjects with a particular focus on wireless communications.

The goals for the FIRST Academies are to serve 16,000 students in the 6th through the 12th grade. Again, 6th through 9th would be in the program at the school; above 9th would be students in the contextual learning programs – robotics, FIRST robotics, or "Bot Ball," or underwater robotics, or any of the existing programs that are currently operating.

Another goal is to motivate and prepare 1,000 students a year for the HiEST Academy, to involve 3,000 students per year in the robotics and space program.

The second of the five parts of this bill is to create a STEM scholarship special fund. This would provide scholarships to students who sign an agreement that includes completing the HiEST Academy, having no involvement with crime or drugs, and being accepted to attend any Hawai'i college or university to pursue a degree or certificate in a STEM discipline. So in other words, if you finish the HiEST Academy at the end of four years, you haven't gotten in any trouble, you will be guaranteed a four-year scholarship to any school if you study a STEM discipline.

Our High Technology Development Corporation would administer the board of this fund.

The third component of the bill is an internship-mentorship program, to be located in DBEDT. The DBEDT would merely contract out with existing organizations and entities, schools, training programs, to provide high school and college students with world of work experience, and to provide employers with relationships with students who represent a future source of essential skills.

I've just returned from the Mainland earlier this month. I was in New Hampshire to participate in the FIRST Robotics competition, the kickoff, and it's a national program – an international program, really. And a big part of my time there was spent with some of the top business executives in the country, especially focused on science, engineering and technology, and they all stressed the importance of these internship-mentorship programs as an opportunity for them to get to know students and expose students to the world of work in a field that they may know nothing about.

To come into a technology company or an engineering firm, and during their school year to have this experience so that the opportunity for that company to hire them is enhanced because they now know the student, the student knows them and the culture of that company. And this is seen as a critical component of an innovation economy – is to give students this opportunity. It's a relatively inexpensive program but an important one in our mind.

The next program is to increase the quality of STEM skill teaching. We've requested $1.7 million to be split between professional development and stipends.

Let me explain it this way. We want to establish a professional development program at UH for practicing elementary, middle and high school science and math teachers. We want to train 2,600 teachers over the biennium, and this would give an opportunity to increase their knowledge of recent developments in science, technology and math.

You could imagine today being a science teacher in any of our schools and, not yourself, having been in a science classroom for the last 5, 10, 15 or more years. The pace and development of change in technology and science – in general knowledge of these areas – has increased exponentially and in a much quicker time frame.

So we feel teachers would really like to have the opportunity, in recognition of the year-round school program – we know it's going to have to be a variety of short-term courses, longer-term courses, depending upon the breaks that the teachers have. But we think this is a very important component.

The second component, the stipends, will actually extend an existing federally-funded program that's set to expire in 2008. This program gives a stipend to graduates, people who graduated in one of the STEM disciplines, but they're not a teacher. It gives them a stipend to go back and get their teaching certificate so they can, in fact, bring the knowledge they have in the STEM disciplines into the classroom.

And finally, we'd like to increase the quality of STEM education in colleges by establishing the eminent scholars program in the High Technology Development Corporation. This would be a dollar-for-dollar matching grant program to provide incentives to establish five permanently endowed faculty positions in STEM disciplines.

I will say that I read Chair Takumi's comments in the paper this morning, as it related to our innovation package, and one of his comments is apropos to something I want to talk about now.

He said that, even the people who drafted these bills and are proposing them – and I guess he means me, and others. He said that we said they're a work in progress, and that's a true statement.

Part of the reason it's a work in progress – there are a couple of reasons, but part of the reason is that there are many, many people passionately interested in this topic – in innovation across the economy, and in innovation in education specifically, and in innovation in the workforce development programs, as we had yesterday morning in another committee, which was passed out.

There are a lot of people very, very interested – passionately interested, and they all have something to bring to this issue. And while we've tried to involve everyone, we have a compressed time frame that we have to develop our package, get it drafted, get it to you, make certain the numbers add up, make certain that it fits in our financial plan – there are many steps we had to take to get here with you, and I would really commend Ted Liu, his entire team, as well as many of our other departments who really collaborated. They reached out as best we could in the time we had, but we recognize there are many other people – and some of them are here today – who have important on-the-ground experience to add to this program.

Now the reason I brought up the "work in progress" point as I come to the end of my testimony is because this dollar-for-dollar matching program – the eminent scholars program for STEM chairs, endowed chairs – is because when we envisioned this program, it was not limited to the University of Hawai`i, but to any university or college here in the state – any accredited institution. Because there is great work being done everywhere in the state, and while UH is our major research institution and our major partner in everything that we propose, we also have great partners at HPU, and Chaminade, and other institutions here in the state.

And so when we originally envisioned, it was to be open to any college or university. However, I am not certain we are not legally constrained in that, under the use of these public funds in this way. I'm not sure we are and I'm not sure we aren't, but it's something throughout the session we can get an answer to as the Attorney General and others weigh in on the legality of that.

But the basic program sets aside $5 million, to be matched dollar-for-dollar by the private sector. So in our original vision that the university or college who wanted to access a million dollars to establish an endowed chair – usually it's $2 million to continue to raise the revenue you need on an ongoing basis to endow one of these chairs – they would have to come forward with their million before money could be taken out of this fund.

At the University of Hawaii, to give you an example, I think they have now a couple of dozen endowed chairs. Out of all their endowed chairs, only five are in non-health-related STEM disciplines. And in order to, again, bring more focus to the importance of the STEM disciplines, and to increase the quality of STEM education in colleges, we felt this eminent scholars program, which has been very effective in other states, would work here as well.

Mr. Chairman, while it is a work in progress, it's a well thought-out, comprehensive, strategic direction for our state in an area that is critical for us to sustain our economy, our way of life, and to diminish our over-reliance on land development as a foundation of our economy.

I don't ever want to rush legislators – I know you have a deliberate approach here, but we do request you consider passing it out so we can move it along, so we don't miss any of the upcoming timelines.

And thanks for all the time you're giving to us today.